

**REMOVAL PROGRAM  
PRELIMINARY ASSESSMENT/  
SITE INVESTIGATION REPORT  
FOR THE  
INTERVALE STREET SITE  
QUINCY, NORFOLK COUNTY, MASSACHUSETTS  
5 JULY 2012**

Prepared For:

U.S. Environmental Protection Agency  
Region I  
Emergency Planning and Response Branch  
5 Post Office Square, Suite 100  
Boston, Massachusetts 02109-3912

CONTRACT NO. EP-W-05-042

TDD NO. 01-12-06-0006

TASK NO. 0813

DC NO. R-7186

Submitted By:

Weston Solutions, Inc.  
Region I  
Superfund Technical Assessment and Response Team (START)  
3 Riverside Drive  
Andover, MA 01810

August 2012

## **TABLE OF CONTENTS**

- I. Preliminary Assessment/Site Investigation Forms
- II. Narrative Chronology
- III. Appendices
  - Appendix A - Figures
  - Appendix B - Tables and Spreadsheets
  - Appendix C - Photodocumentation Log
  - Appendix D - Chain-of-Custody Record
  - Appendix E - Analytical Data

## I. Preliminary Assessment/Site Investigation Forms



**Name:** Intervale Street      **Location:** 175/189 Intervale Street  
**Town:** Quincy      **County:** Norfolk      **State:** Massachusetts (MA)

**(X) Attached USGS Map of Location** **(X) Site I.D. No.: 01KK**

**Latitude:** 42° 14' 7" North      **Longitude:** 71° 00' 54" West

☐ Citizen      ☐ City/Town      ☒ State      ☐ Preremedial      ☐ RCRA  
☐ Other:

**Name of referring party:** Massachusetts Department of Environmental Protection (MassDEP)  
**Address:** 1 Winter Street, Boston, MA

**1) John Zupkus** **Telephone:** (978) 694-3387

**() Verbal:**

(X) **Report:** Consulting Engineers & Environmental Scientists, Inc. *Site Report Relative to Hazardous Materials: 175 Intervale Street, Quincy, Massachusetts.* 1 May 1989.

**(X) Other:** England, Brent. E-mail RE: Intervale Street. 3 July 2012.

**Owner:** Henry P. Gregoire  
**Address:** 50 Lenox Street, Quincy, MA  
**Operator:** PDM Metals, Inc.  
**Address:** 175 Intervale Street, Quincy, MA

**Telephone:** (617) 472-9251  
**Telephone:**

## REMOVAL PRELIMINARY ASSESSMENT

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### Site Access

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**Authorizing Person:** Robert Stevens, Principle Planner, City of Quincy

**Date:** 3 July 2012

**(X)Obtained**

**(X)Verbal**

**Telephone:** (617) 376-1411

**( )Not Obtained**

**( )Written**

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### Historical Preservation

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**( ) Site is Historically Significant or Eligible for Historic Preservation**

#### Contacts Identified

**1) State Historical Preservation Officer (SHPO)**

**Name:** Judith McDonough

**Telephone:**(617) 727-8470

**2) Tribal Historical Preservation Officer (THPO)**

**Name:**

**Telephone:**( )

**Comments:**

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### Physical Site Characterization

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**Background Information:**

The Intervale Street site (the site) is located at 175/189 Intervale Street in Quincy, MA. The site contains an unpaved parking area and a cinderblock/corrugated metal building with a damaged and rusted metal roof. The site is located at the end of a dead-end dirt road. The site is bordered by an active landscaping business and residential properties to the north; Granite Medical Group to the west; Crown Obstetrics/Gynecology (Ob/Gyn) to the east; and a medical diagnostic center to the south.

During the early 1940s, the property was first used as a scrap yard. During the 1980s, vehicles were brought to the site to have the tires removed from the rims, and the vehicles and other scrap metal were stockpiled for salvage. On-site operations also included recoating of manhole covers with tar material.

In 1989, an Environmental Site Assessment conducted by Consulting Engineers & Environmental Scientists, Inc., (CEES) involved the installation of four borings/groundwater monitoring wells following the 1986 explosion of a 55-gallon drum and resulting fire. Much of the drum's contents were released and spread during the initial attempt to control the fire. In April 1989, samples were collected and analyzed from these soil borings and monitoring wells. A high concentration [23,000 milligrams per kilogram (mg/kg)] of total petroleum hydrocarbons (TPH) was identified in soil from one of the borings. Chlorinated compounds were detected in three of the four wells: trichloroethylene (TCE) and tetrachloroethylene (PCE) were detected at the highest concentration [28 parts per billion (ppb) and 38 ppb, respectively] in the groundwater monitoring well in the center of the property. Benzene, toluene, ethylbenzene, and xylenes (BTEX) compounds and

## REMOVAL PRELIMINARY ASSESSMENT

dichlorobenzene were detected in the well on the western edge of the property. Additional volatile organic compounds (VOCs) were also detected.

On 29 May 2012, MassDEP personnel conducted a site visit. While on site, they noted evidence of trespassing, indicating that the property did not appear to be secure. During the site visit, various types of hazardous material were observed. Two rusting 55-gallon drums that appeared to contain liquids were observed on the western boundary of the property. Another 55-gallon drum with unknown contents was observed within the building, along with approximately 50 empty propane tanks. Other hazardous material observed included two 275-gallon aboveground storage tanks (ASTs) lying on their sides outside of the building; containers of some type of sealer or tar; tires; and additional, scattered propane tanks. The two 275-gallon ASTs did not appear to have been properly decommissioned, and were suspected to contain liquid or sludge. There were a few piles of pallets and debris that possibly contained other hazardous materials. A pit was observed in the main section of the building, which may have been associated with a scale or related to an automobile lift with a hydraulic fluid reservoir.

**Description of Substances Possibly Present, Known or Alleged:** Metals and polychlorinated biphenyls (PCBs).

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### Existing Analytical Data

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**( ) Real-Time Monitoring Data:**

**(X) Sampling Data:** Consulting Engineers & Environmental Scientists, Inc. 1 May 1989. *Site Report Relative to Hazardous Material, Project #93034, 175 Intervale Street, Quincy, Massachusetts.*

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### Potential Threat

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Description of potential hazards to environment and/or population-identify any of the criteria for a Removal Action (from NCP) that may be met by the site under 40 CFR 300.415 [b] [2].

- i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.
- ii. Actual or potential contamination of drinking water supplies or sensitive ecosystems.
- iii. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.
- iv. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, that may migrate.
- v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.

## REMOVAL PRELIMINARY ASSESSMENT

- vi. Threat of fire or explosion.
- vii. The availability of other appropriate federal or state response mechanisms to respond to the release.
- viii. Other situations or factors that may pose threats to public health or welfare or the environment.

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### Prior Response Activities

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☐ PRP                      ☒ STATE            ☐ FEDERAL            ☐ OTHER

**Brief Description:** CEES, on behalf of MassDEP, performed a Phase I Site Investigation following the explosion of a 55-gallon drum and resulting fire in 1989. Also, monitoring wells were installed during the investigation, but were subsequently destroyed under unknown circumstances.

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### Priority for Site Investigation

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☒ High                      ☐ Medium                      Low ☐                      None ☐  
**Comments:**

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### Report Generation

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<b>Originator:</b>	Stephanie Bitzas	<b>Date:</b>	16 August 2012
<b>Affiliation:</b>	Weston Solutions (START)	<b>Telephone:</b>	(978) 552-2109
<b>TDD No.:</b>	01-12-06-0006	<b>Task No.:</b>	0813



**EPA REGION I  
REMOVAL SITE INVESTIGATION**

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**Inspection Information**

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**Site Name:** Intervale Street

**Address:** 175/189 Intervale Street

**Town:** Quincy

**County:** Norfolk

**State:** MA

**Date of Inspection:** 05 July 2012

**Time of Inspection:** 0900 to 1300

**Weather Conditions:** 79 degrees Fahrenheit (°F), sunny, breezy

**Site Status at Time of Inspection:**    ( ) ACTIVE    (X) INACTIVE

**Comments:** The site is a foreclosed commercial property. Activities such as scrapping of metal, recycling of tires, and resealing of manhole covers were previously conducted on the site.

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**Agencies/Personnel Performing Inspection**

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	<u><b>Names</b></u>	<u><b>Program</b></u>
(X)	Brent England	U.S. Environmental Protection Agency (EPA) Region I, Emergency Planning and Response Branch (EPRB), On-Scene Coordinator (OSC)
(X)	Stephanie Bitzas Paul Callahan Bill Mahany	EPA Contractor Weston Solutions, Inc. (WESTON), Superfund Technical Assessment and Response Team III (START)
(X)	John Zupkus Valerie Thompson	Massachusetts Department of Environmental Protection (MassDEP)

**Current Owner Based on Field Interview:** It was unclear who the current owner was during the field interview. The previous owner and potentially responsible party (PRP) was Henry P. Gregoire, as trustee of the Gregoire Family Trust; but the property reportedly has been seized by the City of Quincy due to back taxes. Subsequently, the property may have been auctioned.

## REMOVAL SITE INVESTIGATION

Physical Site Characteristics		
Parameter	Quantities/Extent	
<b>(X) Cylinders</b>	Approximately 50 presumed empty propane cylinders were observed in the building; and several propane cylinders were located in debris piles surrounding the building.	
<b>(X) Drums</b>	A total of two 55-gallon drums, four 30-gallon drums, and approximately 18 5-gallon containers were observed at the site. The majority of these drums were observed or suspected to contain grease, motor oil, antifreeze, or automobile fluids. The majority of the 5-gallon containers contained roof sealant asphalt emulsion.	
<b>( ) Lagoons</b>		
<b>(X) Tanks</b>	<b>(X) Above</b>	Two aboveground storage tanks (ASTs) were located along the western boundary of the site. One appeared empty, while the other one appeared to contain either liquid or sludge product.
	<b>( ) Below</b>	
<b>( ) Asbestos</b>		
<b>(X) Piles</b>	Debris piles were observed throughout the site, and contained soil and gravel, discarded metal, construction debris, and tires.	
<b>(X) Stained Soil</b>	There were several areas of stained soil near the western edge of the site. The soil was compacted and was a very dark brown to black.	
<b>( ) Sheens</b>		
<b>(X) Stressed Vegetation</b>	Dead trees and stressed vegetation were observed in the areas of debris piles and scattered containers along the western boundary of the site.	
<b>( ) Landfills</b>		
<b>(X) Population in Vicinity</b>	There were residential areas to the north, and medical facilities to the east, west, and south. An active landscaping company was operating adjacent to the site to the north.	
<b>(X) Wells</b>	<b>( ) Drinking</b> <b>(X) Monitoring</b>	Monitoring wells that were reportedly installed in 1989 were not located.
<b>( ) Other</b>		

## REMOVAL SITE INVESTIGATION

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### Physical Site Observations

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The Intervale Street site (the site) is located at 175/189 Intervale Street in Quincy, Massachusetts. It is at the end of a dead-end dirt road, surrounded by parking lots and commercial buildings. The site is approximately 25,000 square feet and includes two parcels of land. There is one unoccupied cinderblock/corrugated metal building, including an attached storage room and an attached cinderblock room with no apparent access.

Apart from the building, the site is an open, unpaved area. There is scrub vegetation and trees around the perimeter of the site, and various piles of debris throughout the site.

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### Field Sampling and Analysis

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Matrix/Analytical Parameter	Field Instrumentation				
	CGI/O <sub>2</sub>	RAD	PID	FID	CO
Background Readings:	0.0%/20.9%	10µR/hr	0 uab	--	0 ppm
Soil:	0.0%/20.9%	10µR/hr	0-1.9 uab	--	0 ppm
Drums:	0.0%/20.9%	--	0-0.3 uab	--	0 ppm

ppm= parts per million

µR/hr = microRoentgen per hour

uab = units above background

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### Field Quality Control Procedures

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**(X) SOP Followed**

**( ) Deviation From SOP**

**Comments:** START followed the protocol outlined in the document entitled, *Sampling and Analysis Plan for the Intervale Street Site, Quincy, Norfolk County, Massachusetts*, dated 29 June 2012.

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### Description of Sampling Conducted

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Eleven surface soil samples (including one field duplicate) were collected on 5 July 2012 at locations designated by the OSC. All 11 of the samples were submitted to the EPA OEME laboratory, located in North Chelmsford, Massachusetts, for total metals and PCBs analyses. Product samples were collected from the two drums along the western boundary of the site for on-site hazardous categorization.

## REMOVAL SITE INVESTIGATION

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### Analyses

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Analytical Parameter	Media	Laboratory
<input type="checkbox"/> VOC	<input type="checkbox"/> AIR	<input checked="" type="checkbox"/> NERL
<input checked="" type="checkbox"/> PCB	<input type="checkbox"/> WATER	<input type="checkbox"/> CLP
<input type="checkbox"/> PESTICIDE	<input checked="" type="checkbox"/> SOIL	<input type="checkbox"/> PRIVATE
<input checked="" type="checkbox"/> METALS	<input checked="" type="checkbox"/> SOURCE	<input type="checkbox"/> DAS
<input type="checkbox"/> CYANIDE	<input type="checkbox"/> SEDIMENT	<input type="checkbox"/> SOW
<input type="checkbox"/> SVOC	<input type="checkbox"/> SOIL GAS	<input checked="" type="checkbox"/> FIELD
<input type="checkbox"/> TOXICITY		
<input type="checkbox"/> DIOXIN		
<input type="checkbox"/> ASBESTOS		
<input checked="" type="checkbox"/> OTHER - Hazardous Categorization		

Analytical results: [see Appendix E]

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### Receptors

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#### Comments

- ☐ Drinking Water:      ☐ Private:  
                                 ☐ Municipal:
- ☐ Groundwater:
- ☒ Unrestricted Access:      There is unrestricted vehicular and pedestrian access to the site.  
   Adjacent parking lots are fenced.
- ☐ Population in Proximity:
- ☐ Sensitive Ecosystem:
- ☐ Other:

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### Additional Procedures for Site Determination

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- ☐ Biological Evaluation                      ☐ ATSDR

To be determined by the On-Scene Coordinator (OSC).

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### Site Determination

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Depending on further information, criteria that may be met by the site include 40 CFR 300.415 [b] [2], parts:

- i. Actual or potential exposure to nearby human populations, animals, or the food chain from hazardous substances, pollutants or contaminants.
- ii. Actual or potential contamination of drinking water supplies or sensitive ecosystems.

## REMOVAL SITE INVESTIGATION

- iii. Hazardous substances or pollutants or contaminants in drums, barrels, tanks, or other bulk storage containers, that may pose a threat of release.
- iv. High levels of hazardous substances or pollutants or contaminants in soils largely at or near the surface, which may migrate.
- v. Weather conditions that may cause hazardous substances or pollutants or contaminants to migrate or be released.
- vi. Threat of fire or explosion.
- vii. The availability of other appropriate federal or state response mechanisms to respond to the release.
- viii. Other situations or factors that may pose threats to public health or welfare or the environment.

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### Report Generation

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<b>Originator:</b>	Stephanie Bitzas	<b>Date:</b>	16 August 2012
<b>Affiliation:</b>	Weston Solutions (START)	<b>Telephone:</b>	(978) 552-2109
<b>TDD No.:</b>	01-12-06-0006	<b>Task No.:</b>	0813

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## II. Narrative Chronology

## **NARRATIVE CHRONOLOGY**

### **Site Description**

The Intervale Street site (the site) is located at 175/189 Intervale Street in Quincy, Norfolk County, Massachusetts (see Appendix A, Figure 1) [1]. The geographic coordinates of the site, as measured from its approximate center, are 42° 14' 7" north latitude and 71° 00' 54" west longitude. The site is bordered to the east, west, and south by commercial properties, and to the north by residential and commercial properties (see Appendix A, Figure 2) [2]. There is one unoccupied cinderblock/corrugated metal building, including an attached storage room and an attached cinderblock room with no apparent access. The building and attached rooms are structurally compromised. Since June 1972, the owner of the site has been the Gregoire Family Trust [3].

U.S. Environmental Protection Agency (EPA) and Weston Solutions, Inc (WESTON®) Superfund Technical Assessment and Response Team III (START) personnel mobilized to the site as part of a Removal Program Preliminary Assessment/Site Investigation (PA/SI) to collect drum and surface soil samples to identify potential areas of concern, and to determine if further actions, including removal activities, may be warranted at the site.

### **Site History**

The site has been used as a metal scrapping yard since the 1940s. It has more recently been operated by Henry P. Gregoire to conduct metal scrapping, tire removal/recycling, and manhole cover recoating using a tar-related material.

In 1986, there was a fire involving a 55-gallon drum containing unspecified materials. Much of the drum's contents were released and dispersed during the initial attempt to control the fire. During an Environmental Site Assessment conducted by Consulting Engineers & Environmental Scientists, Inc. (CEES) on behalf of Mr. John Noonan, Esquire, four borings/groundwater monitoring wells were completed and sampled. Polychlorinated biphenyl (PCB) Aroclor-1260 was detected in the soil at a maximum concentration of 2,000 micrograms per kilogram ( $\mu\text{g/Kg}$ ), or 2.0 milligrams per kilogram ( $\text{mg/kg}$ ). Total petroleum hydrocarbons (TPH) were detected at a maximum concentration of 23,000  $\text{mg/kg}$  in one of the soil boring locations. Chlorinated compounds were detected in three of the four monitoring wells. Trichloroethylene (TCE) and tetrachloroethylene (PCE) were detected (maximum concentrations of 28 parts per billion [ppb] and 38 ppb, respectively) in the groundwater monitoring well in the center of the property. Benzene, toluene, ethylbenzene, and xylene (BTEX) compounds and dichlorobenzene were detected in the well on the western edge of the property. Additional volatile organic compounds (VOCs) were also detected [4].

On 29 May 2012, Massachusetts Department of Environmental Protection (MassDEP) personnel conducted a site visit. While on site, they noted evidence of trespassing, indicating that the property did not appear to be secure. During the site visit, various types of hazardous material were observed. Two rusting 55-gallon drums that appeared to contain liquids were observed on the western boundary of the property. Another 55-gallon drum with unknown contents was observed within the building, along with approximately 50 empty propane tanks. Other

hazardous material observed included two 275-gallon aboveground storage tanks (ASTs) lying on their sides outside of the building; containers of some type of sealer or tar; tires; and additional, scattered propane tanks. The two 275-gallon ASTs did not appear to have been properly decommissioned, and were suspected to contain liquid or sludge. There were a few piles of pallets and debris that possibly contained other hazardous materials. A pit was observed in the main section of the building, which may have been associated with a scale or related to an automobile lift with a hydraulic fluid reservoir.

### **Site Activities**

On 5 July 2012, EPA On-Scene Coordinator (OSC) Brent England met START members Stephanie Bitzas, Paul Callahan, and Bill Mahany at the site to conduct drum and surface soil sampling activities. MassDEP representatives John Zupkus and Valerie Thompson were also on site to discuss the site history, site access, and building contents.

Upon arrival, START prepared sampling and air monitoring equipment and conducted a safety and operations meeting. Topics included heat stress, trip hazards, chemical hazards, and overhead hazards. Personnel signed the Health and Safety Plan (HASP) and tailgate meeting sign-in sheet. The site-specific HASP was prepared as a separate document, entitled *Weston Solutions, Inc., Region I START Site Health and Safety Plan (HASP) for the Intervale Street Site, Quincy, Norfolk County, Massachusetts*, dated July 2012 [5].

START personnel established a support zone and calibrated air monitoring instruments, including a MultiRAE Plus photoionization detector (PID) meter [with lower explosive limit (LEL), oxygen (O<sub>2</sub>), hydrogen sulfide (H<sub>2</sub>S), carbon monoxide (CO), and volatile organic compound (VOC) sensors] and a Ludlum Model 19A radiation (MicroR) meter [6,7]. Background levels were recorded as follows: LEL = 0%; O<sub>2</sub> = 20.9%; H<sub>2</sub>S = 0 parts per million (ppm); CO = 0 ppm; VOC = 0 units above background (uab); and Radiation = 8-10 microRoentgens per hour (μR/hr). No readings above background were detected in ambient air.

EPA and MassDEP personnel discussed the site history, ownership, and access issues. EPA and START personnel then conducted a site walk-through. Numerous containers were observed inside the building, which was not entered during the site walk-through. No readings above background were detected during the site walk-through. Site conditions and observations were photodocumented (see Appendix C, Photodocumentation Log).

### **Sampling Activities**

Following the site walk-through, START members Callahan and Mahany donned Level B personal protective equipment (PPE), monitored the drums with a PID, then conducted drum sampling. PID screening results indicated slightly elevated VOC readings in one of the 55-gallon drums (maximum 0.3 ppm). Drum sample DM-01 was collected from a full 55-gallon drum, and drum sample DM-02 was collected from an approximately one-quarter-full 55-gallon drum. START member Mahany conducted hazardous categorization (Hazcat) screening of the two samples. Hazcat screening indicated that one of the drums (DM-01) appeared to contain used antifreeze, and the other drum (DM-02) appeared to contain used motor oil.

After the drum sampling was completed, START personnel entered the building to investigate the additional drums, which were found to contain small amounts of sludge and grease. Several gasoline cans were noted to be approximately one-tenth full of unknown liquids (no odor, and VOC readings of 0 uab). Other materials observed included a 5-gallon container of motor oil and a 5-gallon container of flammable wood stain (containing naphtha). A cinderblock room was observed on the north side of the building, with no apparent means of access.

Soil sample locations were selected by OSC England based on visual observation. START personnel collected grab surface soil samples using dedicated equipment [8]. Air monitoring was conducted at each sample location: there were no levels above background detected except at surface soil sample location SS-08, which had an elevated VOC reading of 1.9 uab. Sampling activities were performed in accordance with the site sampling and analysis plan (SAP), which was prepared as a separate document, entitled *Sampling and Analysis Plan for the Intervale Street Site, Quincy, Norfolk County, Massachusetts* [9].

START collected a total of 11 surface soil samples (including one duplicate) from 10 locations. Upon completion of sampling activities, START personnel photodocumented sample locations and used the Trimble Pathfinder global positioning system (GPS) unit to record sample locations and site features (see Appendix A, Figure 3) [10].

All samples were delivered to EPA Office of Environmental Measurement and Evaluation (OEME), located in North Chelmsford, Massachusetts, for PCB and total metal analyses (see Appendix D, Chain-of-Custody Records).

### **Analytical Data Summaries**

#### **PCBs**

Analytical results of the 11 surface soil samples submitted to OEME for PCB analysis indicated the presence of two PCB aroclors above laboratory reporting limits, which included the following (maximum concentration in parentheses): Aroclor-1254 (6.0 mg/kg in SS-06); and Aroclor-1260 (4.9 mg/kg in SS-10) (see Appendix B, Table 2) [11].

Two PCB aroclors were detected in the surface soil samples above their respective Massachusetts Contingency Plan (MCP) Soil Category 1 standards (S-1 standard in parentheses), including the following: Aroclor-1254 (2 mg/kg) in samples SS-04 through SS-06, SS-10, and SS-11; and Aroclor-1260 (2 mg/kg) in sample SS-10 (see Appendix B, Table 2).

#### **Total Metals**

Analytical results of the 11 surface soil samples submitted to OEME for total metals analysis indicated the presence of 18 metals above laboratory reporting limits, which included the following (maximum concentration in parentheses): aluminum (14,000 mg/kg in SS-10); antimony (11 mg/kg in SS-10); arsenic (37 mg/kg in SS-11); barium (1,500 mg/kg in SS-01); cadmium (12 mg/kg in SS-10); calcium (12,000 mg/kg in SS-06); chromium (560 mg/kg in SS-10); cobalt (25 mg/kg in SS-10); copper (3,500 mg/kg in SS-10); iron (120,000 mg/kg in SS-10); lead (3,200 mg/kg in SS-01); magnesium (4,600 mg/kg in SS-10); manganese (1,300 mg/kg in

SS-10); nickel (450 mg/kg in SS-10); silver (6.1 mg/kg in SS-10); thallium (3.3 mg/kg in SS-08); vanadium (130 mg/kg in SS-04); and zinc (2,800 mg/kg in SS-11) (see Appendix B, Table 3) [12].

Seven metals were detected in the surface soil samples above their respective MCP Soil Category 1 standards (S-1 standard in parentheses), including the following: arsenic (20 mg/kg) in samples SS-05 and SS-11; barium (1,000 mg/kg) in sample SS-01; cadmium (2 mg/kg) in samples SS-01, SS-02, SS-04, SS-05, SS-10, and SS-11; chromium (30 mg/kg) in samples SS-01, SS-02, SS-04 through SS-06, and SS-08 through SS-11; lead (300 mg/kg) in samples SS-01, SS-02, SS-04 through SS-06, and SS-09 through SS-11; nickel (20 mg/kg) in samples SS-01, SS-02, SS-04 through SS-06, and SS-08 through SS-11; and zinc (2,500 mg/kg) in samples SS-10 and SS-11 (see Appendix B, Table 3).

## **REFERENCES**

- [1] U.S. Geological Survey (USGS). 1980. Boston South, Massachusetts. (7.5-minute series topographic map).
- [2] Microsoft Corporation. 2010. Bing Maps Aerial.
- [3] City of Quincy Tax Assessor's Office. Parcel Information for 175 Intervale Street. Available from <http://data.visionappraisal.com/QuincyMA>. Internet accessed 29 June 2012.
- [4] Consulting Engineers & Environmental Scientists, Inc. Site Report Relative to Hazardous Materials: 175 Intervale Street, Quincy, Massachusetts. 1 May 1989.
- [5] Weston Solutions, Inc. July 2012. *Health and Safety Plan for the Intervale Street Site, Quincy, Norfolk County, Massachusetts*.
- [6] Weston Solutions, Inc. May 2011. Standard Operating Procedure for PID-MultiRAE (Multi-Gas Monitor with VOC Detection and LEL) RAE Model PGM-50 Multi-Gas Monitor (MultiRAE), SOP No. WSI/S3-018, Superfund Technical Assessment and Response Team III (START), Andover, MA.
- [7] Weston Solutions, Inc. May 2011. Standard Operating Procedure for Ludlum Model 19 Micro R Meter, SOP No. WSI/S3-027, Superfund Technical Assessment and Response Team III (START), Andover, MA.
- [8] Weston Solutions, Inc. May 2011. Standard Operating Procedure for Surface and Subsurface Soil Sampling, SOP No. WSI/S3-001, Superfund Technical Assessment and Response Team III (START), Andover, MA.
- [9] Weston Solutions, Inc. July 2012. *Sampling and Analysis Plan for the Intervale Street Site, Quincy, Massachusetts*.
- [10] Weston Solutions, Inc. May 2011. Standard Operating Procedure for Trimble™ Pathfinder Pro XRS Global Positioning System (GPS) with TSCI Data Logger, SOP No. WSI/S3-020, Superfund Technical Assessment and Response Team III (START), Andover, MA.
- [11] U.S. Environmental Protection Agency. 27 July 2012. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 12070007. Analysis: PCBs Medium Level in Soils and Sediments.
- [12] U.S. Environmental Protection Agency. 20 July 2012. Office of Environmental Measurement and Evaluation. Laboratory Report. Project No. 12070007. Analysis: Metals in Soil Medium Level by ICP.

### III. Appendices

## Appendix A

### Figures

Figure 1 – Site Location Map

Figure 2 – Site Diagram

Figure 3 – Surface Soil/Drum Sample Location Map



**Figure 1**

**Site Location Map**

**Intervale Street  
175/189 Intervale Street  
Quincy, Massachusetts**

**EPA Region I  
Superfund Technical Assessment and  
Response Team (START) III  
Contract No. EP-W-05-042**

**TDD Number:** 12-06-0006  
**Created by:** S. Bitzas  
**Created on:** 02 July 2012  
**Modified by:** S. Bitzas  
**Modified on:** 13 August 2012

**Data Sources:**

Topos: MicroPath/USGS  
Quadrangle Name: Boston South, MA  
All other data: START



*The Trusted Integrator for Sustainable Solutions*



**Figure 2**

**Site Diagram**


**Intervale Street  
175/189 Intervale Street  
Quincy, Massachusetts**

**EPA Region I  
Superfund Technical Assessment and  
Response Team (START) III  
Contract No. EP-W-05-042**  
TDD Number: 12-06-0006  
Created by: S. Bitzas  
Created on: 02 July 2012  
Modified by: S. Bitzas  
Modified on: 23 August 2012

**Legend**

 Site Boundary



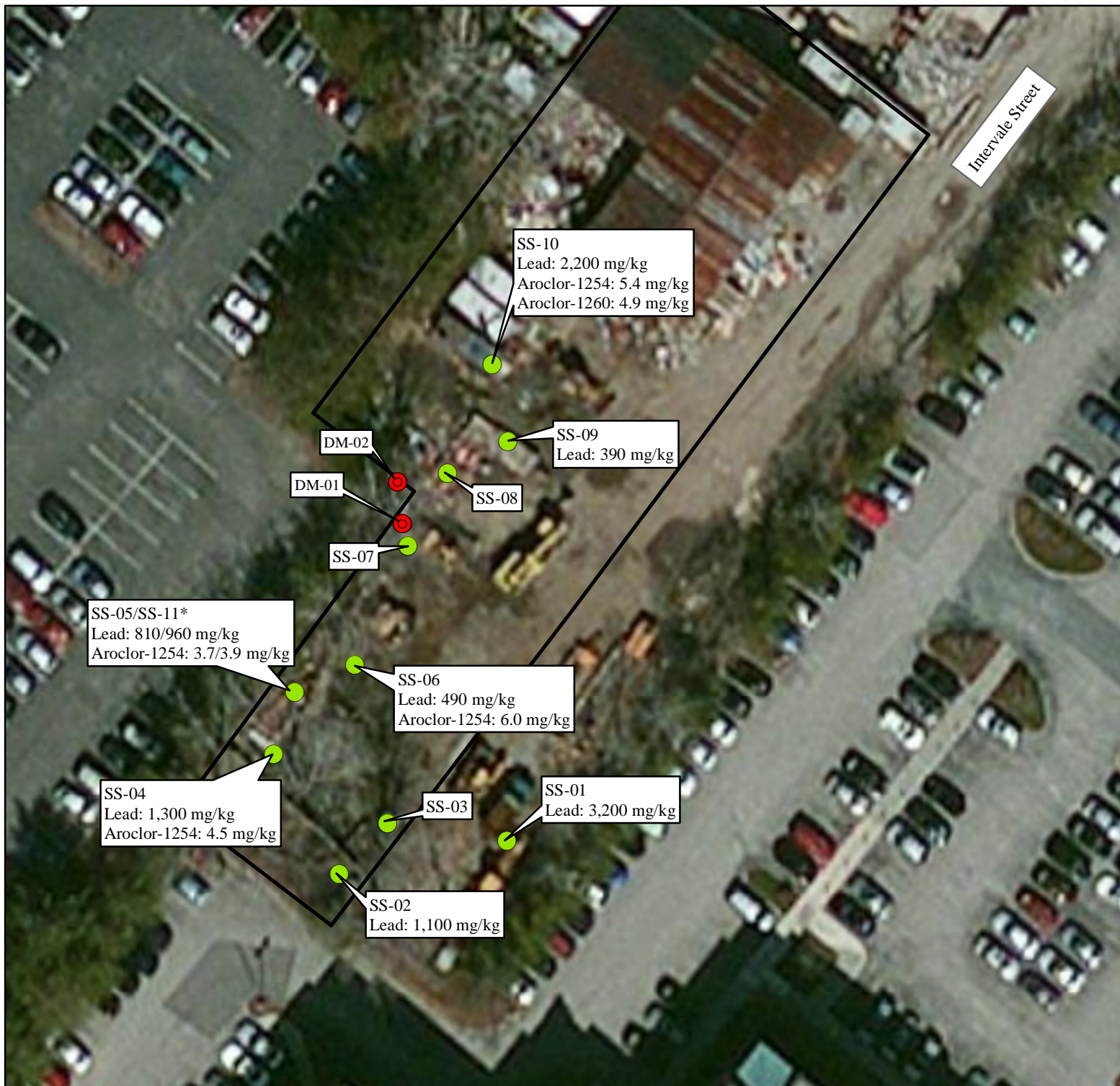
0 10 20 40 60 80  
 Feet

**Data Sources:**

Imagery: Bing Maps Aerial (Microsoft)  
Topos: MicroPath  
All other data: START



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**Figure 3**  
**Surface Soil/  
Drum Sample Location Map**

**Intervale Street**  
**175/189 Intervale Street**  
**Quincy, Massachusetts**

**EPA Region I**  
**Superfund Technical Assessment and**  
**Response Team (START) III**  
**Contract No. EP-W-05-042**  
**TDD Number:** 12-06-0006  
**Created by:** S. Bitzas  
**Created on:** 10 July 2012  
**Modified by:** S. Bitzas  
**Modified on:** 16 August 2012

### **LEGEND**

- Closed Top Drum
- Surface Soil Sample
- Site Boundary

Only results exceeding Massachusetts  
Contingency Plan Soil Category 1  
Standard for Lead, Aroclor-1254,  
and Aroclor-1260 are shown.

mg/kg= milligrams per kilograms

\*SS-11 is a field duplicate of SS-05.



0 25 50  
Feet

### **Data Sources:**

Imagery: Bing Maps Aerial  
Topos: MicroPath  
All other data: START



## Appendix B

### Tables and Spreadsheets

Table 1	Surface Soil Sample Descriptions
Table 2	Summary of Polychlorinated Biphenyl Results
Table 3	Summary of Metals Results

**TABLE 1**  
**SURFACE SOIL SAMPLE DESCRIPTIONS**  
**INTERVALE STREET**  
**QUINCY, MASSACHUSETTS**  
**5 JULY 2012**

Sample Location	Sample Number	Sample Depth	Collection Date	Sample Type	Sample Description	Comments
SS-01	R01-120705BE-0001	0 - 3 in.	05 July 2012	Grab	Dark brown, fine-to-medium SAND, little coarse gravel.	No air monitoring readings above background level.
SS-02	R01-120705BE-0002	0 - 3 in.	05 July 2012	Grab	Dark brown, fine SAND and SILT, little organics (roots), trace fine gravel.	Soil pile behind concrete wall.
SS-03	R01-120705BE-0003	0 - 3 in.	05 July 2012	Grab	Brown, fine SILT and SAND, little gravel/debris (asphalt and rocks).	No air monitoring readings above background level.
SS-04	R01-120705BE-0004	0 - 3 in.	05 July 2012	Grab	Brown, fine-to-coarse SAND, trace coarse gravel/debris, trace organics (grass).	No air monitoring readings above background level.
SS-05/ SS-11	R01-120705BE-0005/ R01-120705BE-0012	0 - 3 in.	05 July 2012	Grab	Brown fine-to-coarse SAND, trace organics, trace coarse gravel.	No air monitoring readings above background level.
SS-06	R01-120705BE-0006	0 - 3 in.	05 July 2012	Grab	Black, fine-to-medium SAND and SOIL, little fine-to-coarse gravel.	Stained soil. No air monitoring readings above background level.
SS-07	R01-120705BE-0007	0 - 3 in.	05 July 2012	Grab	Light brown, fine-to-coarse SAND, some gravel.	Soil pile. No air monitoring readings above background level.
SS-08	R01-120705BE-0008	0 - 3 in.	05 July 2012	Grab	Dark brown, fine-to-medium SAND, some coarse gravel. Petroleum odor.	VOC maximum reading = 1.9 uab
SS-09	R01-120705BE-0009	0 - 3 in.	05 July 2012	Grab	Brown, fine SAND and SILT, some clay, trace gravel.	No air monitoring readings above background level.
SS-10	R01-120705BE-0010	0 - 3 in.	05 July 2012	Grab	Brown, fine SAND and SILT, some clay, trace gravel (rocks and metal). Petroleum odor.	No air monitoring readings above background level.

**Notes:**

in. = inches

SS = surface soil

uab = units above background

VOC= volatile organic compound

TABLE 2

**SUMMARY OF POLYCHLORINATED BIPHENYL RESULTS**  
**SURFACE SOIL SAMPLES**  
**INTERVALE STREET SITE**  
**QUINCY, MASSACHUSETTS**  
**5 JULY 2012**  
**mg/Kg**

SAMPLE LOCATION SAMPLE NUMBER DEPTH	SS-01 120705BE-0001 0 - 0.25 ft.	SS-02 120705BE-0002 0 - 0.25 ft.	SS-03 120705BE-0003 0 - 0.25 ft.	SS-04 120705BE-0004 0 - 0.25 ft.	SS-05 120705BE-0005 0 - 0.25 ft.	SS-06 120705BE-0006 0 - 0.25 ft.	MCP-S1
<b>COMPOUND</b>							
Aroclor-1254	ND	0.75	ND	<b>4.5</b>	<b>3.7</b>	<b>6.0</b>	2
Aroclor-1260	1.4	0.79	ND	1.5	1.6	1.5	2

SAMPLE LOCATION SAMPLE NUMBER DEPTH	SS-07 120705BE-0007 0 - 0.25 ft.	SS-08 120705BE-0008 0 - 0.25 ft.	SS-09 120705BE-0009 0 - 0.25 ft.	SS-10 120705BE-0010 0 - 0.25 ft.	SS-11 120705BE-0012 0 - 0.25 ft.		MCP-S1
<b>COMPOUND</b>							
Aroclor-1254	ND	0.60 P	0.62	<b>5.4</b>	<b>3.9</b>		2
Aroclor-1260	ND	0.45	0.42	<b>4.9</b>	1.9		2

**NOTES:**

- 1) Samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP, PESTSOIL3.SOP, PCBs Medium Level in Soils and Sediments.
- 2) All results in milligrams per Kilogram (mg/Kg).
- 3) MCP-S1 = Massachusetts Contingency Plan Soil Category 1 Standard. Units in mg/Kg.
- 4) Bolded and shaded results exceed MCP-S1 Standard.
- 5) ND = Not Detected.
- 6) P = The confirmation value exceeded 35% difference and is less than 100%; the lower value is reported.  
Complete analytical data reports are included as an appendix to this report.
- 7) All results for Aroclors 1016, 1221, 1232, 1242, 1248, 1262, and 1268 were ND.
- 8) ft.= Feet.
- 9) Sample SS-11 is a field duplicate of SS-05.

**TABLE 3**  
**SUMMARY OF METALS RESULTS**  
**SURFACE SOIL SAMPLES**  
**INTERVALE STREET**  
**QUINCY, MASSACHUSETTS**  
**5 JULY 2012**  
**mg/Kg**

SAMPLE LOCATION SAMPLE NUMBER SAMPLE DEPTH	SS-01 120705BE-0001 0 - 0.25 ft.	SS-02 120705BE-0002 0 - 0.25 ft.	SS-03 120705BE-0003 0 - 0.25 ft.	SS-04 120705BE-0004 0 - 0.25 ft.	SS-05 120705BE-0005 0 - 0.25 ft.	SS-06 120705BE-0006 0 - 0.25 ft.	SS-07 120705BE-0007 0 - 0.25 ft.	MCP-S1
PARAMETER								
Aluminum	5,700	12,000	7,600	10,000	8,700	7,700	12,000	NL
Antimony	ND	3.2	ND	ND	ND	ND	ND	20
Arsenic	8.9	11	4.9	16	<b>36</b>	8	3.9	20
Barium	<b>1,500</b>	260 J	42	410	290	160	23	1,000
Beryllium	ND	ND	ND	ND	ND	ND	ND	100
Cadmium	<b>6.3</b>	<b>5</b>	ND	<b>7.5</b>	<b>6</b>	ND	ND	2
Calcium	2,700	5,900	2,900	5,900	3,500	12,000	1,100	NL
Chromium	<b>120 J</b>	<b>110</b>	14	<b>340</b>	<b>190</b>	<b>100</b>	14	30*
Cobalt	ND	9	4.1	14	12	7.3	4.6	NL
Copper	3,200	580	35	1,500	710	540	8.9	NL
Iron	54,000	29,000	12,000	100,000	71,000	42,000	15,000	NL
Lead	<b>3,200</b>	<b>1,100</b>	98	<b>1,300</b>	<b>810</b>	<b>490</b>	18	300
Magnesium	2,400	3,200	2,000	3,400	3,000	3,000	2,300	NL
Manganese	790	550	240	1,200	750	580	230	NL
Nickel	<b>110</b>	<b>93</b>	13	<b>270</b>	<b>160</b>	<b>81</b>	7.5	20
Selenium	ND	ND	ND	ND	ND	ND	ND	400
Silver	ND	0.99 J	ND	ND	ND	ND	ND	100
Thallium	ND	2.5	2.6	ND	ND	ND	2.7	8
Vanadium	28	42	33	130	71	50	26	600
Zinc	1,100	1,200	88	1,900	1,500	710	40	2,500

**NOTES:**

- 1) Metals samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP EIASOP-INGDVICP1, Metals in Soil Medium Level by ICP.
- 2) All results in milligrams per Kilogram (mg/Kg).
- 3) MCP-S1 = Massachusetts Contingency Plan Soil Category 1 Standard. Units in mg/Kg.
- 4) Bolded and shaded results exceed MCP-S1 Standard.
- 5) ND = Not Detected.
- 6) NL= Not Listed.
- 7) J = Estimated Value.  
Complete analytical data reports are included as an appendix to this report.
- 8) ft= Feet.
- 9) \* This is the total Chromium standard that is applicable in the absence of species-specific data for Chromium III and Chromium IV.

TABLE 3

**SUMMARY OF METALS RESULTS  
SURFACE SOIL SAMPLES  
INTERVALE STREET  
QUINCY, MASSACHUSETTS  
5 JULY 2012  
mg/Kg**

SAMPLE LOCATION SAMPLE NUMBER SAMPLE DEPTH	SS-08 120705BE-0008 0 - 0.25 ft.	SS-09 120705BE-0009 0 - 0.25 ft.	SS-10 120705BE-0010 0 - 0.25 ft.	SS-11 120705BE-0012 0 - 0.25 ft.	MCP-S1
<b>PARAMETER</b>					
Aluminum	7,000	7,300	14,000	9,100	NL
Antimony	ND	ND	11	ND	20
Arsenic	4.6	ND	16	<b>37</b>	20
Barium	63	61	330	320	1,000
Beryllium	ND	ND	ND	ND	100
Cadmium	1.1	ND	<b>12</b>	<b>5.7</b>	2
Calcium	7,400	4,400	6,000	3,600	NL
Chromium	<b>87</b>	<b>370</b>	<b>560</b>	<b>160</b>	30*
Cobalt	7.4	12	25	11	NL
Copper	420	930	3,500	700	NL
Iron	27,000	54,000	120,000	68,000	NL
Lead	240	<b>390</b>	<b>2,200</b>	<b>960</b>	300
Magnesium	3,100	3,200	4,600	3,100	NL
Manganese	430	670	1,300	820	NL
Nickel	<b>69</b>	<b>250</b>	<b>450</b>	<b>130</b>	20
Selenium	ND	ND	ND	ND	400
Silver	ND	ND	6.1	ND	100
Thallium	3.3	ND	ND	ND	8
Vanadium	42	59	120	63	600
Zinc	300	610	<b>2,500</b>	<b>2,800</b>	2,500

**NOTES:**

- 1) Metals samples analyzed by U.S. EPA Office of Environmental Measurement and Evaluation (OEME) using EPA Region I SOP EIASOP-INGDVICP1, Metals in Soil Medium Level by ICP.
- 2) All results in milligrams per Kilogram (mg/Kg).
- 3) MCP-S1 = Massachusetts Contingency Plan Soil Category 1 Standard. Units in mg/Kg.
- 4) Bolded and shaded results exceed MCP-S1 Standard.
- 5) ND = Not Detected.
- 6) NL= Not Listed.
- 7) J = Estimated Value.  
Complete analytical data reports are included as an appendix to this report.
- 8) ft= Feet.
- 9) \* This is the total Chromium standard that is applicable in the absence of species-specific data for Chromium III and Chromium IV.

## Appendix C

### Photodocumentation Log

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of the main site building. Photograph taken facing northwest.

**DATE:** 5 July 2012

**TIME:** 0846

**PHOTOGRAPHER:** S. Bitzas

**CAMERA:** FinePix XP20



**SCENE:** View of Intervale Street (unpaved section) leading in to the site, showing minimal vehicle traffic. Note material from adjacent landscaping business in foreground to the right. Photograph taken facing north.

**DATE:** 5 July 2012

**TIME:** 0846

**PHOTOGRAPHER:** S. Bitzas

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of the empty lot (189 Intervale Street) and dead trees located south of the main building on the western edge of the site. Photograph taken facing west.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 0846

**CAMERA:** FinePix XP20



**SCENE:** View of the concrete wall located at the southern edge of the site. Photograph taken facing southwest.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 0846

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of debris located along the eastern edge of the site. Photograph taken facing south.

**DATE:** 5 July 2012

**TIME:** 0847

**PHOTOGRAPHER:** S. Bitzas

**CAMERA:** FinePix XP20



**SCENE:** View of an empty hydraulic fluid container located in debris along the eastern edge of the site. Photograph taken facing east.

**DATE:** 5 July 2012

**TIME:** 0857

**PHOTOGRAPHER:** S. Bitzas

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of a soil pile containing plastic buckets and possible landscaping materials located south of a concrete wall at the southern edge of the site. Photograph taken facing north.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 0906

**CAMERA:** FinePix XP20



**SCENE:** View of jersey barriers, concrete wall, and a soil pile on the southeastern edge of the site. Photograph taken facing southeast.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 0911

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of the second soil pile north of the concrete wall, which contained large pieces of metal and asphalt chunks. Photograph taken facing southeast.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 0911

**CAMERA:** FinePix XP20



**SCENE:** View of stained soil area found at several locations throughout the site. Photograph taken facing north.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 0912

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of debris and miscellaneous 5-gallon containers found along the western edge of the site. Photograph taken facing west.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 0912

**CAMERA:** FinePix XP20



**SCENE:** View of one of the 275-gallon aboveground storage tanks (ASTs) on the western edge of the site. This AST was believed to be empty. Photograph taken facing west.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 0913

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of the second 275-gallon AST in the brush on the western edge of the site. This AST was believed to contain liquid or sludge. Photograph taken facing northwest.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 0913

**CAMERA:** FinePix XP20



**SCENE:** View of two 55-gallon drums at the western edge of the site where drum samples D-01 and D-02 were collected. D-01 can be seen with a metal spout extending out of the top of the drum. Photograph taken facing west.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 0915

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of the southern side of the main building and miscellaneous debris. Photograph taken facing northwest.

**DATE:** 5 July 2012

**TIME:** 0919

**PHOTOGRAPHER:** S. Bitzas

**CAMERA:** FinePix XP20



**SCENE:** View of the inside of the main building showing damage to the roof and evidence of trespassing note graffiti).

**DATE:** 5 July 2012

**TIME:** 0925

**PHOTOGRAPHER:** S. Bitzas

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of approximately 50 empty propane tanks located inside the main building.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** B. Mahany

**TIME:** 0931

**CAMERA:** FinePix XP20



**SCENE:** View of nine 5-gallon buckets in the main building containing tar emulsion/sealant.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** B. Mahany

**TIME:** 1048

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of soil sample SS-01. Photograph taken facing southeast.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 1229

**CAMERA:** FinePix XP20

TOP



**SCENE:** View of soil sample SS-02 on the soil pile located south of the concrete wall at the southern edge of the site. Photograph taken facing northwest.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 1233

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**

TOP



**SCENE:** View of soil sample SS-03 on the soil pile located north of the concrete wall and east of the jersey barriers. Photograph taken facing east.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 1234

**CAMERA:** FinePix XP20

TOP



**SCENE:** View of soil sample SS-04 on the soil pile located north of the concrete wall and west of the jersey barriers. Photograph taken facing south.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** S. Bitzas

**TIME:** 1235

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of soil samples SS-05 and SS-06. Photograph taken facing south.

**DATE:** 5 July 2012

**TIME:** 1238

**PHOTOGRAPHER:** B. Mahany

**CAMERA:** FinePix XP20



**SCENE:** View of soil sample SS-07 located on the gravel pile next to ASTs. Photograph taken facing south.

**DATE:** 5 July 2012

**TIME:** 1240

**PHOTOGRAPHER:** B. Mahany

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of soil sample SS-08. Photograph taken facing south.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** B. Mahany

**TIME:** 1241

**CAMERA:** FinePix XP20



**SCENE:** View of soil sample SS-09. Photograph taken facing south.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** B. Mahany

**TIME:** 1242

**CAMERA:** FinePix XP20

**PHOTODOCUMENTATION LOG**  
**Intervale Street • Quincy, Massachusetts**



**SCENE:** View of soil sample SS-10. Photograph taken facing south.

**DATE:** 5 July 2012

**PHOTOGRAPHER:** B. Mahany

**TIME:** 1243

**CAMERA:** FinePix XP20

## Appendix D

### Chain-of-Custody Record

USEPA

DateShipped: 7/6/2012

**Sampler Signature**

Paul Callahan	Location	Ana
---------------	----------	-----

### CHAIN OF CUSTODY RECORD

Project Code: Intervale Street

**Contact Name:** Stephanie Bitzas

Contact Phone: 978-621-1215

No: 1-070512-142010-0001

Lab: OEME

Lab Phone: 617-918-8300

Lab #	Sample #	Location	Analyses	Matrix	Collected	Sample Time	Numb Cont	Container	Preservative	MS/MSD
	R01-120705BE-0001	SS-01	Metals	Soil	7/5/2012	11:15	1	4 oz Jar	4 C	Y
	R01-120705BE-0001	SS-01	PCBs	Soil	7/5/2012	11:15	1	4 oz Jar	4 C	Y
	R01-120705BE-0002	SS-02	Metals	Soil	7/5/2012	11:22	1	4 oz Jar	4 C	N
	R01-120705BE-0002	SS-02	PCBs	Soil	7/5/2012	11:22	1	4 oz Jar	4 C	N
	R01-120705BE-0003	SS-03	Metals	Soil	7/5/2012	11:33	1	4 oz Jar	4 C	N
	R01-120705BE-0003	SS-03	PCBs	Soil	7/5/2012	11:33	1	4 oz Jar	4 C	N
	R01-120705BE-0004	SS-04	Metals	Soil	7/5/2012	11:42	1	4 oz Jar	4 C	N
	R01-120705BE-0004	SS-04	PCBs	Soil	7/5/2012	11:42	1	4 oz Jar	4 C	N
	R01-120705BE-0005	SS-05	Metals	Soil	7/5/2012	11:42	1	4 oz Jar	4 C	N
	R01-120705BE-0005	SS-05	PCBs	Soil	7/5/2012	11:42	1	4 oz Jar	4 C	N
	R01-120705BE-0006	SS-06	Metals	Soil	7/5/2012	11:54	1	4 oz Jar	4 C	N
	R01-120705BE-0006	SS-06	PCBs	Soil	7/5/2012	11:54	1	4 oz Jar	4 C	N
	R01-120705BE-0007	SS-07	Metals	Soil	7/5/2012	11:55	1	4 oz Jar	4 C	N
	R01-120705BE-0007	SS-07	PCBs	Soil	7/5/2012	11:55	1	4 oz Jar	4 C	N
	R01-120705BE-0008	SS-08	Metals	Soil	7/5/2012	12:00	1	4 oz Jar	4 C	N
	R01-120705BE-0008	SS-08	PCBs	Soil	7/5/2012	12:00	1	4 oz Jar	4 C	N
	R01-120705BE-0009	SS-09	Metals	Soil	7/5/2012	12:10	1	4 oz Jar	4 C	N
	R01-120705BE-0009	SS-09	PCBs	Soil	7/5/2012	12:10	1	4 oz Jar	4 C	N
	R01-120705BE-0010	SS-10	Metals	Soil	7/5/2012	12:10	1	4 oz Jar	4 C	N

Special Instructions:	SAMPLES TRANSFERRED FROM
	CHAIN OF CUSTODY #

[illegible]

**Sampler Signature**

Shipped: 7/6/2012  
Per Signature 

**Contact Phone: 978-621-1215**

Lab Phone: 617-918-8300

[illegible]

Special Instructions:	SAMPLES TRANSFERRED FROM
	CHAIN OF CUSTODY #

[illegible]

Appendix E

Analytical Results



United States Environmental Protection Agency  
Office of Environmental Measurement & Evaluation  
11 Technology Drive  
North Chelmsford, MA 01863-2431

Laboratory Report

July 27, 2012

Brent England - Mail Code OSRR02-2  
US EPA New England R1

Project Number: 12070007

Project: Intervale Street Site - Quincy, MA

Analysis: PCBs Medium Level in Soils and Sediments

Analyst: Paul Carroll

*Paul Carroll*  
7.27.12

Analytical Procedure:

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Sample preparation and analysis was done following the EPA Region I SOP, PESTSOIL3.SOP.

The SOP is based on EPA SW-846 Method 8082

The analysis was performed using high resolution capillary column chromatography on an Agilent 6890 Series gas chromatograph equipped with dual electron capture detectors. The 30 meter dual capillary column system consists of a J&W DB-5 and J&W DB-1701, both with 0.25mm ID and 0.25 micron film thickness.

The results are reported on a dry weight basis.

Date Samples Received by the Laboratory : 07/06/2012

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340 .

Sincerely,

*Daniel N. Boudreau* 7/31/12  
Daniel N. Boudreau  
Chemistry Team Leader

<b>Qualifiers:</b>	<b>RL</b>	Reporting limit
	<b>ND</b>	Not Detected above Reporting limit
	<b>NA</b>	Not Applicable due to high sample dilutions or sample interferences
	<b>J</b>	Estimated value
	<b>E</b>	Estimated value exceeds the calibration range
	<b>L</b>	Estimated value is below the calibration range
	<b>B</b>	Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
	<b>P</b>	The confirmation value exceeded 35% difference and is less than 100%. The lower value is reported.
	<b>C</b>	The identification has been confirmed by GC/MS.
	<b>R</b>	No recovery was calculated since the analyte concentration is greater than four times the spike level.

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0001

Date of Collection: 7/5/2012

Date of Extraction: 7/9/12

Date of Analysis: 7/17/12

Dry Weight Extracted: 6.07 grams

Wet Weight Extracted: 6.60 grams

Lab Sample ID: AB30998

Matrix: Soil

Final Volume: 5 mL

Percent Solids: 92%

Extract Dilution: 5

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	0.41	
11104-28-2	Aroclor-1221	ND	0.41	
11141-16-5	Aroclor-1232	ND	0.41	
53469-21-9	Aroclor-1242	ND	0.41	
12672-29-6	Aroclor-1248	ND	0.41	
11097-69-1	Aroclor-1254	ND	0.41	
11096-82-5	Aroclor-1260	1.4	0.41	
11100-14-4	Aroclor-1262	ND	0.41	
37324-23-5	Aroclor-1268	ND	0.41	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	80	36 - 131
Decachlorobiphenyl	115	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0002

Date of Collection: 7/5/2012

Date of Extraction: 7/9/12

Date of Analysis: 7/17/12

Dry Weight Extracted: 5.43 grams

Wet Weight Extracted: 6.19 grams

Lab Sample ID: AB30999

Matrix: Soil

Final Volume: 5 mL

Percent Solids: 88%

Extract Dilution: 5, 1

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	0.46	
11104-28-2	Aroclor-1221	ND	0.46	
11141-16-5	Aroclor-1232	ND	0.46	
53469-21-9	Aroclor-1242	ND	0.46	
12672-29-6	Aroclor-1248	ND	0.46	
11097-69-1	Aroclor-1254	0.75	0.46	
11100-14-4	Aroclor-1262	ND	0.46	
37324-23-5	Aroclor-1268	ND	0.46	
11096-82-5	Aroclor-1260	0.79	0.09	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	82	36 - 131
Decachlorobiphenyl	106	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0003

Date of Collection: 7/5/2012

Date of Extraction: 7/9/12

Date of Analysis: 7/17/12

Dry Weight Extracted: 5.52 grams

Wet Weight Extracted: 6.20 grams

Lab Sample ID: AB31000

Matrix: Soil

Final Volume: 5 mL

Percent Solids: 89%

Extract Dilution: 1

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	0.10	
11104-28-2	Aroclor-1221	ND	0.10	
11141-16-5	Aroclor-1232	ND	0.10	
53469-21-9	Aroclor-1242	ND	0.10	
12672-29-6	Aroclor-1248	ND	0.10	
11097-69-1	Aroclor-1254	ND	0.10	
11096-82-5	Aroclor-1260	ND	0.10	
11100-14-4	Aroclor-1262	ND	0.10	
37324-23-5	Aroclor-1268	ND	0.10	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	79	36 - 131
Decachlorobiphenyl	89	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0004

Lab Sample ID: AB31001

Date of Collection: 7/5/2012

Matrix: Soil

Date of Extraction: 7/9/12

Final Volume: 5 mL

Date of Analysis: 7/23/12

Percent Solids: 93%

Dry Weight Extracted: 5.616 grams

Extract Dilution: 10, 2

Wet Weight Extracted: 6.051 grams

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	0.89	
11104-28-2	Aroclor-1221	ND	0.89	
11141-16-5	Aroclor-1232	ND	0.89	
53469-21-9	Aroclor-1242	ND	0.89	
12672-29-6	Aroclor-1248	ND	0.89	
11097-69-1	Aroclor-1254	4.5	0.89	
11100-14-4	Aroclor-1262	ND	0.89	
37324-23-5	Aroclor-1268	ND	0.89	
11096-82-5	Aroclor-1260	1.5	0.18	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	81	36 - 131
Decachlorobiphenyl	109	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0005

Date of Collection: 7/5/2012

Date of Extraction: 7/9/12

Date of Analysis: 7/17/12

Dry Weight Extracted: 5.70 grams

Wet Weight Extracted: 6.30 grams

Lab Sample ID: AB31002

Matrix: Soil

Final Volume: 5 mL

Percent Solids: 90%

Extract Dilution: 5

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	0.44	
11104-28-2	Aroclor-1221	ND	0.44	
11141-16-5	Aroclor-1232	ND	0.44	
53469-21-9	Aroclor-1242	ND	0.44	
12672-29-6	Aroclor-1248	ND	0.44	
11097-69-1	Aroclor-1254	3.7	0.44	
11096-82-5	Aroclor-1260	1.6	0.44	
11100-14-4	Aroclor-1262	ND	0.44	
37324-23-5	Aroclor-1268	ND	0.44	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	88	36 - 131
Decachlorobiphenyl	113	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0006

Date of Collection: 7/5/2012

Date of Extraction: 7/9/12

Date of Analysis: 7/17/12

Dry Weight Extracted: 6.01 grams

Wet Weight Extracted: 6.54 grams

Lab Sample ID: AB31003

Matrix: Soil

Final Volume: 5 mL

Percent Solids: 92%

Extract Dilution: 10, 5

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	0.83	
11104-28-2	Aroclor-1221	ND	0.83	
11141-16-5	Aroclor-1232	ND	0.83	
53469-21-9	Aroclor-1242	ND	0.83	
12672-29-6	Aroclor-1248	ND	0.83	
11097-69-1	Aroclor-1254	6.0	0.83	
11100-14-4	Aroclor-1262	ND	0.83	
37324-23-5	Aroclor-1268	ND	0.83	
11096-82-5	Aroclor-1260	1.5	0.42	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	82	36 - 131
Decachlorobiphenyl	104	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0007

Date of Collection: 7/5/2012

Date of Extraction: 7/9/12

Date of Analysis: 7/17/12

Dry Weight Extracted: 5.71 grams

Wet Weight Extracted: 6.24 grams

Lab Sample ID: AB31004

Matrix: Soil

Final Volume: 5 mL

Percent Solids: 92%

Extract Dilution: 1

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	0.10	
11104-28-2	Aroclor-1221	ND	0.10	
11141-16-5	Aroclor-1232	ND	0.10	
53469-21-9	Aroclor-1242	ND	0.10	
12672-29-6	Aroclor-1248	ND	0.10	
11097-69-1	Aroclor-1254	ND	0.10	
11096-82-5	Aroclor-1260	ND	0.10	
11100-14-4	Aroclor-1262	ND	0.10	
37324-23-5	Aroclor-1268	ND	0.10	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	68	36 - 131
Decachlorobiphenyl	90	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0008  
Date of Collection: 7/5/2012  
Date of Extraction: 7/9/12  
Date of Analysis: 7/17/12  
Dry Weight Extracted: 5.29 grams  
Wet Weight Extracted: 6.08 grams

Lab Sample ID: AB31005  
Matrix: Soil  
Final Volume: 5 mL  
Percent Solids: 87%  
Extract Dilution: 5,1

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	0.47	
11104-28-2	Aroclor-1221	ND	0.47	
11141-16-5	Aroclor-1232	ND	0.47	
53469-21-9	Aroclor-1242	ND	0.47	
12672-29-6	Aroclor-1248	ND	0.47	
11097-69-1	Aroclor-1254	0.60	0.47	P
11100-14-4	Aroclor-1262	ND	0.47	
37324-23-5	Aroclor-1268	ND	0.47	
11096-82-5	Aroclor-1260	0.45	0.09	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	65	36 - 131
Decachlorobiphenyl	107	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0009

Lab Sample ID: AB31006

Date of Collection: 7/5/2012

Matrix: Soil

Date of Extraction: 7/9/12

Final Volume: 5 mL

Date of Analysis: 7/17/12

Percent Solids: 92%

Dry Weight Extracted: 5.67 grams

Extract Dilution: 1

Wet Weight Extracted: 6.13 grams

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	0.09	
11104-28-2	Aroclor-1221	ND	0.09	
11141-16-5	Aroclor-1232	ND	0.09	
53469-21-9	Aroclor-1242	ND	0.09	
12672-29-6	Aroclor-1248	ND	0.09	
11097-69-1	Aroclor-1254	0.62	0.09	
11096-82-5	Aroclor-1260	0.42	0.09	
11100-14-4	Aroclor-1262	ND	0.09	
37324-23-5	Aroclor-1268	ND	0.09	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	71	36 - 131
Decachlorobiphenyl	84	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0010  
Date of Collection: 7/5/2012  
Date of Extraction: 7/9/12  
Date of Analysis: 7/17/12  
Dry Weight Extracted: 5.22 grams  
Wet Weight Extracted: 6.44 grams

Lab Sample ID: AB31007  
Matrix: Soil  
Final Volume: 5 mL  
Percent Solids: 81%  
Extract Dilution: 20, 10

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	1.90	
11104-28-2	Aroclor-1221	ND	1.90	
11141-16-5	Aroclor-1232	ND	1.90	
53469-21-9	Aroclor-1242	ND	1.90	
12672-29-6	Aroclor-1248	ND	1.90	
11097-69-1	Aroclor-1254	5.4	1.90	
11100-14-4	Aroclor-1262	ND	1.90	
37324-23-5	Aroclor-1268	ND	1.90	
11096-82-5	Aroclor-1260	4.9	1.00	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	73	36 - 131
Decachlorobiphenyl	115	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0012

Date of Collection: 7/5/2012

Date of Extraction: 7/9/12

Date of Analysis: 7/17/12

Dry Weight Extracted: 6.18 grams

Wet Weight Extracted: 6.89 grams

Lab Sample ID: AB31008

Matrix: Soil

Final Volume: 5 mL

Percent Solids: 90%

Extract Dilution: 20, 10

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	1.60	
11104-28-2	Aroclor-1221	ND	1.60	
11141-16-5	Aroclor-1232	ND	1.60	
53469-21-9	Aroclor-1242	ND	1.60	
12672-29-6	Aroclor-1248	ND	1.60	
11097-69-1	Aroclor-1254	3.9	1.60	
11100-14-4	Aroclor-1262	ND	1.60	
37324-23-5	Aroclor-1268	ND	1.60	
11096-82-5	Aroclor-1260	1.9	0.80	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	78	36 - 131
Decachlorobiphenyl	109	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

PCBs Medium Level in Soils and Sediments

Client Sample ID: R01-120705BE-0013  
Date of Collection: 7/5/2012  
Date of Extraction: 7/9/12  
Date of Analysis: 7/17/12  
Dry Weight Extracted: 5.00 grams  
Wet Weight Extracted: 5.00 grams

Lab Sample ID: AB31009  
Matrix: Lab Sand  
Final Volume: 5 mL  
Percent Solids: 100%  
Extract Dilution: 1

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	0.10	
11104-28-2	Aroclor-1221	ND	0.10	
11141-16-5	Aroclor-1232	ND	0.10	
53469-21-9	Aroclor-1242	ND	0.10	
12672-29-6	Aroclor-1248	ND	0.10	
11097-69-1	Aroclor-1254	0.28	0.10	
11096-82-5	Aroclor-1260	ND	0.10	
11100-14-4	Aroclor-1262	ND	0.10	
37324-23-5	Aroclor-1268	ND	0.10	

Surrogate Compounds

2,4,5,6-Tetrachloro-m-xylene  
Decachlorobiphenyl

Recoveries (%)

80  
96

QC Ranges

36 - 131  
30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Laboratory Blank

Client Sample ID: N/A  
Date of Collection: N/A  
Date of Extraction: 7/9/12  
Date of Analysis: 7/17/12  
Dry Weight Extracted: 5.02 grams  
Wet Weight Extracted: 5.02 grams

Lab Sample ID: N/A  
Matrix: Lab Sand  
Final Volume: 5 mL  
Percent Solids: 100%  
Extract Dilution: 1

CAS Number	Compound	Concentration mg/Kg	RL mg/Kg	Qualifier
12674-11-2	Aroclor-1016	ND	0.10	
11104-28-2	Aroclor-1221	ND	0.10	
11141-16-5	Aroclor-1232	ND	0.10	
53469-21-9	Aroclor-1242	ND	0.10	
12672-29-6	Aroclor-1248	ND	0.10	
11097-69-1	Aroclor-1254	ND	0.10	
11096-82-5	Aroclor-1260	ND	0.10	
11100-14-4	Aroclor-1262	ND	0.10	
37324-23-5	Aroclor-1268	ND	0.10	

Surrogate Compounds	Recoveries (%)	QC Ranges
2,4,5,6-Tetrachloro-m-xylene	84	36 - 131
Decachlorobiphenyl	105	30 - 165

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

PCB MATRIX SPIKE (MS) / MATRIX SPIKE DUPLICATE (MSD) RECOVERY

Intervale Street Site - Quincy, MA

Sample ID: AB30999

PARAMETER	SPIKE ADDED mg/Kg	SAMPLE CONCENTRATION mg/Kg	MS CONCENTRATION mg/Kg	MS % REC	QC LIMITS (% REC)
Aroclor-1254	0.55	0.75	1.56	147.27	70 - 130

PARAMETER	MSD SPIKE ADDED	MSD CONCENTRATION mg/Kg	MSD % REC	RPD %	QC LIMITS RPD
Aroclor-1254	0.55	1.18	78.18	61	50

Samples in Batch: AB30998, AB30999, AB31000, AB31001, AB31002, AB31003, AB31004, AB31005, AB31006,  
AB31007, AB31008, AB31009

Comments: Matrix Spike recoveries and relative percent difference (RPD) were high due to the presence of the spiked analyte in the sample.

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

LABORATORY DUPLICATE RESULTS

Intervale Street Site - Quincy, MA

Sample ID: AB30999

PARAMETER	SAMPLE RESULT mg/Kg	SAMPLE DUPLICATE RESULT mg/Kg	PRECISION RPD %	QC LIMITS
Aroclor-1016	ND	ND	ND	50
Aroclor-1221	ND	ND	ND	50
Aroclor-1232	ND	ND	ND	50
Aroclor-1242	ND	ND	ND	50
Aroclor-1248	ND	ND	ND	50
Aroclor-1254	0.75	0.87	15	50
Aroclor-1260	0.79	0.69	14	50
Aroclor-1262	ND	ND	ND	50
Aroclor-1268	ND	ND	ND	50

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

**LABORATORY FORTIFIED BLANK (LFB) RECOVERY**

Intervale Street Site - Quincy, MA

COMPOUND	SPIKE ADDED mg/Kg	LFB CONCENTRATION mg/Kg	LFB RECOVERY %	QC LIMITS (% REC)
Aroclor-1254	0.60	0.63	105	70 - 130

Comments:



United States Environmental Protection Agency  
Office of Environmental Measurement & Evaluation  
11 Technology Drive  
North Chelmsford, MA 01863-2431

Laboratory Report

July 20, 2012

Brent England - Mail Code OSRR02-2

US EPA New England R1

Project Number: 12070007

Project: Intervale Street Site - Quincy, MA

Analysis: Metals in Soil Medium Level by ICP

EPA Chemist: Michael Dowling *le For MD 7/30/12*

**Analytical Procedure:**

All samples were received and logged in by the laboratory according to the USEPA New England Laboratory SOP for Sample Log-in.

Samples were analyzed following the EPA Region I SOP, EIASOP-INGDVICP1.

Samples were prepared following the EPA Region I SOP, EIASOP-INGMETALSPREP7

Preparation and analysis SOP's are based on "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition, Revision 2, Final Update III, Methods 3050B and 6010B," respectively. Samples were analyzed using a Perkin Elmer 4300 Dual View Inductively Coupled Plasma - Optical Emission Spectrometer.

Samples were prepared and analyzed by ESAT contractors working at the USEPA New England Laboratory.

Date Samples Received by the Laboratory: 07/06/2012

Data were reviewed in accordance with the internal verification procedures described in the EPA New England OEME Chemistry QA Plan.

Results relate only to the items tested or to the samples as received by the Laboratory. This analytical report shall not be reproduced except in full, without written approval of the laboratory.

Report may contain multiple sections and each section will be numbered independently.

If you have any questions please call me at 617-918-8340

Sincerely,

*Daniel N. Boudreau 7/30/12*

Daniel N. Boudreau  
Chemistry Team Leader

## Laboratory Qualifiers:

<b>RL</b>	Reporting limit
<b>ND</b>	Not Detected above reporting limit
<b>NA</b>	Not Applicable
<b>NC</b>	Not calculated since analyte concentration is ND
<b>J1</b>	Estimated value due to MS recovery outside acceptance criteria
<b>J2</b>	Estimated value due to LFB result outside acceptance criteria
<b>J3</b>	Estimated value due to RPD result outside acceptance criteria
<b>J4</b>	Estimated value due to LCS result outside acceptance criteria
<b>B</b>	Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contamination in the sample extract is less than 10 times the concentration in the blank.
<b>R</b>	No recovery was calculated since the analyte concentration is greater than four times the spike level.

All sample results, except the results for sample AB31010, are reported in mg/Kg, dry weight basis. The results for sample AB31010 are reported as received, in mg/Kg.

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Metals in Soil Medium Level by ICP

Client Sample ID:	R01-120705BE-0001	Lab Sample ID:	AB30998
Date of Collection:	7/5/2012	Matrix	Soil
Date of Digestion:	7/10/2012	Final Volume:	50 mL
Date of Analysis:	7/13/2012	Digestate Dilution:	3
Volume Digested:	N/A	pH:	N/A

CAS Number	Parameter	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	5700	32	
7440-36-0	Antimony	ND	5.9	
7440-38-2	Arsenic	8.9	5.9	
7440-39-3	Barium	1500	5.9	
7440-41-7	Beryllium	ND	2.4	
7440-43-9	Cadmium	6.3	2.9	
7440-70-2	Calcium	2700	29	
7440-47-3	Chromium	120	5.9	J1
7440-48-4	Cobalt	ND	5.9	
7440-50-8	Copper	3200	5.9	
7439-89-6	Iron	54000	12	
7439-92-1	Lead	3200	5.9	
7439-95-4	Magnesium	2400	29	
7439-96-5	Manganese	790	5.9	
7440-02-0	Nickel	110	5.9	
7782-49-2	Selenium	ND	12	
7440-22-4	Silver	ND	2.9	
7440-28-0	Thallium	ND	5.9	
7440-62-2	Vanadium	28	5.9	
7440-66-6	Zinc	1100	5.9	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Metals in Soil Medium Level by ICP

Client Sample ID: R01-120705BE-0002

Lab Sample ID: AB30999

Date of Collection: 7/5/2012

Matrix: Soil

Date of Digestion: 7/10/2012

Final Volume: 50 mL

Date of Analysis: 7/13/2012

Digestate Dilution: 1

Volume Digested: N/A

pH: N/A

CAS Number	Parameter	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	12000	11	
7440-36-0	Antimony	3.2	2.0	
7440-38-2	Arsenic	11	2.0	
7440-39-3	Barium	260	2.0	J3
7440-41-7	Beryllium	ND	0.78	
7440-43-9	Cadmium	5.0	0.98	
7440-70-2	Calcium	5900	9.8	
7440-47-3	Chromium	110	2.0	
7440-48-4	Cobalt	9.0	2.0	
7440-50-8	Copper	580	2.0	
7439-89-6	Iron	29000	3.9	
7439-92-1	Lead	1100	2.0	
7439-95-4	Magnesium	3200	9.8	
7439-96-5	Manganese	550	2.0	
7440-02-0	Nickel	93	2.0	
7782-49-2	Selenium	ND	3.9	
7440-22-4	Silver	0.99	0.98	J3
7440-28-0	Thallium	2.5	2.0	
7440-62-2	Vanadium	42	2.0	
7440-66-6	Zinc	1200	2.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

**Intervale Street Site - Quincy, MA**

**Metals in Soil Medium Level by ICP**

Client Sample ID: R01-120705BE-0003

Lab Sample ID: AB31000

Date of Collection: 7/5/2012

Matrix: Soil

Date of Digestion: 7/10/2012

Final Volume: 50 mL

Date of Analysis: 7/13/2012

Digestate Dilution: 1

Volume Digested: N/A

pH: N/A

<b>CAS Number</b>	<b>Parameter</b>	<b>Concentration mg/Kg</b>	<b>RL mg/Kg</b>	<b>Qualifier</b>
7429-90-5	Aluminum	7600	11	
7440-36-0	Antimony	ND	1.9	
7440-38-2	Arsenic	4.9	1.9	
7440-39-3	Barium	42	1.9	
7440-41-7	Beryllium	ND	0.77	
7440-43-9	Cadmium	ND	0.96	
7440-70-2	Calcium	2900	9.6	
7440-47-3	Chromium	14	1.9	
7440-48-4	Cobalt	4.1	1.9	
7440-50-8	Copper	35	1.9	
7439-89-6	Iron	12000	3.8	
7439-92-1	Lead	98	1.9	
7439-95-4	Magnesium	2000	9.6	
7439-96-5	Manganese	240	1.9	
7440-02-0	Nickel	13	1.9	
7782-49-2	Selenium	ND	3.8	
7440-22-4	Silver	ND	0.96	
7440-28-0	Thallium	2.6	1.9	
7440-62-2	Vanadium	33	1.9	
7440-66-6	Zinc	88	1.9	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Metals in Soil Medium Level by ICP

Client Sample ID: R01-120705BE-0004

Lab Sample ID: AB31001

Date of Collection: 7/5/2012

Matrix: Soil

Date of Digestion: 7/10/2012

Final Volume: 50 mL

Date of Analysis: 7/13/2012

Digestate Dilution: 5

Volume Digested: N/A

pH: N/A

CAS Number	Parameter	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	10000	55	
7440-36-0	Antimony	ND	10	
7440-38-2	Arsenic	16	10	
7440-39-3	Barium	410	10	
7440-41-7	Beryllium	ND	4.0	
7440-43-9	Cadmium	7.5	5.0	
7440-70-2	Calcium	5900	50	
7440-47-3	Chromium	340	10	
7440-48-4	Cobalt	14	10	
7440-50-8	Copper	1500	10	
7439-89-6	Iron	100000	20	
7439-92-1	Lead	1300	10	
7439-95-4	Magnesium	3400	50	
7439-96-5	Manganese	1200	10	
7440-02-0	Nickel	270	10	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	ND	5.0	
7440-28-0	Thallium	ND	10	
7440-62-2	Vanadium	130	10	
7440-66-6	Zinc	1900	10	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Metals in Soil Medium Level by ICP

Client Sample ID: R01-120705BE-0005

Lab Sample ID: AB31002

Date of Collection: 7/5/2012

Matrix: Soil

Date of Digestion: 7/10/2012

Final Volume: 50 mL

Date of Analysis: 7/13/2012

Digestate Dilution: 4

Volume Digested: N/A

pH: N/A

CAS Number	Parameter	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	8700	44	
7440-36-0	Antimony	ND	8.0	
7440-38-2	Arsenic	36	8.0	
7440-39-3	Barium	290	8.0	
7440-41-7	Beryllium	ND	3.2	
7440-43-9	Cadmium	6.0	4.0	
7440-70-2	Calcium	3500	40	
7440-47-3	Chromium	190	8.0	
7440-48-4	Cobalt	12	8.0	
7440-50-8	Copper	710	8.0	
7439-89-6	Iron	71000	16	
7439-92-1	Lead	810	8.0	
7439-95-4	Magnesium	3000	40	
7439-96-5	Manganese	750	8.0	
7440-02-0	Nickel	160	8.0	
7782-49-2	Selenium	ND	16	
7440-22-4	Silver	ND	4.0	
7440-28-0	Thallium	ND	8.0	
7440-62-2	Vanadium	71	8.0	
7440-66-6	Zinc	1500	8.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Metals in Soil Medium Level by ICP

Client Sample ID:	R01-120705BE-0006	Lab Sample ID:	AB31003
Date of Collection:	7/5/2012	Matrix:	Soil
Date of Digestion:	7/10/2012	Final Volume:	50 mL
Date of Analysis:	7/13/2012	Digestate Dilution:	3
Volume Digested:	N/A	pH:	N/A

<b>CAS Number</b>	<b>Parameter</b>	<b>Concentration mg/Kg</b>	<b>RL mg/Kg</b>	<b>Qualifier</b>
7429-90-5	Aluminum	7700	32	
7440-36-0	Antimony	ND	5.9	
7440-38-2	Arsenic	8.0	5.9	
7440-39-3	Barium	160	5.9	
7440-41-7	Beryllium	ND	2.4	
7440-43-9	Cadmium	ND	2.9	
7440-70-2	Calcium	12000	29	
7440-47-3	Chromium	100	5.9	
7440-48-4	Cobalt	7.3	5.9	
7440-50-8	Copper	540	5.9	
7439-89-6	Iron	42000	12	
7439-92-1	Lead	490	5.9	
7439-95-4	Magnesium	3000	29	
7439-96-5	Manganese	580	5.9	
7440-02-0	Nickel	81	5.9	
7782-49-2	Selenium	ND	12	
7440-22-4	Silver	ND	2.9	
7440-28-0	Thallium	ND	5.9	
7440-62-2	Vanadium	50	5.9	
7440-66-6	Zinc	710	5.9	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Metals in Soil Medium Level by ICP

Client Sample ID: R01-120705BE-0007

Lab Sample ID: AB31004

Date of Collection: 7/5/2012

Matrix: Soil

Date of Digestion: 7/10/2012

Final Volume: 50 mL

Date of Analysis: 7/13/2012

Digestate Dilution: 1

Volume Digested: N/A

pH: N/A

CAS Number	Parameter	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	12000	11	
7440-36-0	Antimony	ND	1.9	
7440-38-2	Arsenic	3.9	1.9	
7440-39-3	Barium	23	1.9	
7440-41-7	Beryllium	ND	0.77	
7440-43-9	Cadmium	ND	0.96	
7440-70-2	Calcium	1100	9.6	
7440-47-3	Chromium	14	1.9	
7440-48-4	Cobalt	4.6	1.9	
7440-50-8	Copper	8.9	1.9	
7439-89-6	Iron	15000	3.8	
7439-92-1	Lead	18	1.9	
7439-95-4	Magnesium	2300	9.6	
7439-96-5	Manganese	230	1.9	
7440-02-0	Nickel	7.5	1.9	
7782-49-2	Selenium	ND	3.8	
7440-22-4	Silver	ND	0.96	
7440-28-0	Thallium	2.7	1.9	
7440-62-2	Vanadium	26	1.9	
7440-66-6	Zinc	40	1.9	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Metals in Soil Medium Level by ICP

Client Sample ID: R01-120705BE-0008  
Date of Collection: 7/5/2012  
Date of Digestion: 7/10/2012  
Date of Analysis: 7/13/2012  
Volume Digested: N/A

Lab Sample ID: AB31005  
Matrix: Soil  
Final Volume: 50 mL  
Digestate Dilution: 1  
pH: N/A

CAS Number	Parameter	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	7000	11	
7440-36-0	Antimony	ND	2.0	
7440-38-2	Arsenic	4.6	2.0	
7440-39-3	Barium	63	2.0	
7440-41-7	Beryllium	ND	0.78	
7440-43-9	Cadmium	1.1	0.98	
7440-70-2	Calcium	7400	9.8	
7440-47-3	Chromium	87	2.0	
7440-48-4	Cobalt	7.4	2.0	
7440-50-8	Copper	420	2.0	
7439-89-6	Iron	27000	3.9	
7439-92-1	Lead	240	2.0	
7439-95-4	Magnesium	3100	9.8	
7439-96-5	Manganese	430	2.0	
7440-02-0	Nickel	69	2.0	
7782-49-2	Selenium	ND	3.9	
7440-22-4	Silver	ND	0.98	
7440-28-0	Thallium	3.3	2.0	
7440-62-2	Vanadium	42	2.0	
7440-66-6	Zinc	300	2.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Metals in Soil Medium Level by ICP

Client Sample ID: R01-120705BE-0009

Lab Sample ID: AB31006

Date of Collection: 7/5/2012

Matrix: Soil

Date of Digestion: 7/10/2012

Final Volume: 50 mL

Date of Analysis: 7/13/2012

Digestate Dilution: 3

Volume Digested: N/A

pH: N/A

CAS Number	Parameter	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	7300	32	
7440-36-0	Antimony	ND	5.9	
7440-38-2	Arsenic	ND	5.9	
7440-39-3	Barium	61	5.9	
7440-41-7	Beryllium	ND	2.4	
7440-43-9	Cadmium	ND	2.9	
7440-70-2	Calcium	4400	29	
7440-47-3	Chromium	370	5.9	
7440-48-4	Cobalt	12	5.9	
7440-50-8	Copper	930	5.9	
7439-89-6	Iron	54000	12	
7439-92-1	Lead	390	5.9	
7439-95-4	Magnesium	3200	29	
7439-96-5	Manganese	670	5.9	
7440-02-0	Nickel	250	5.9	
7782-49-2	Selenium	ND	12	
7440-22-4	Silver	ND	2.9	
7440-28-0	Thallium	ND	5.9	
7440-62-2	Vanadium	59	5.9	
7440-66-6	Zinc	610	5.9	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Metals in Soil Medium Level by ICP

Client Sample ID:	R01-120705BE-0010	Lab Sample ID:	AB31007
Date of Collection:	7/5/2012	Matrix:	Soil
Date of Digestion:	7/10/2012	Final Volume:	50 mL
Date of Analysis:	7/13/2012	Digestate Dilution:	5
Volume Digested:	N/A	pH:	N/A

CAS Number	Parameter	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	14000	54	
7440-36-0	Antimony	11	9.8	
7440-38-2	Arsenic	16	9.8	
7440-39-3	Barium	330	9.8	
7440-41-7	Beryllium	ND	3.9	
7440-43-9	Cadmium	12	4.9	
7440-70-2	Calcium	6000	49	
7440-47-3	Chromium	560	9.8	
7440-48-4	Cobalt	25	9.8	
7440-50-8	Copper	3500	9.8	
7439-89-6	Iron	120000	20	
7439-92-1	Lead	2200	9.8	
7439-95-4	Magnesium	4600	49	
7439-96-5	Manganese	1300	9.8	
7440-02-0	Nickel	450	9.8	
7782-49-2	Selenium	ND	20	
7440-22-4	Silver	6.1	4.9	
7440-28-0	Thallium	ND	9.8	
7440-62-2	Vanadium	120	9.8	
7440-66-6	Zinc	2500	9.8	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Metals in Soil Medium Level by ICP

Client Sample ID: R01-120705BE-0012

Lab Sample ID: AB31008

Date of Collection: 7/5/2012

Matrix: Soil

Date of Digestion: 7/10/2012

Final Volume: 50 mL

Date of Analysis: 7/13/2012

Digestate Dilution: 4

Volume Digested: N/A

pH: N/A

CAS Number	Parameter	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	9100	42	
7440-36-0	Antimony	ND	7.7	
7440-38-2	Arsenic	37	7.7	
7440-39-3	Barium	320	7.7	
7440-41-7	Beryllium	ND	3.1	
7440-43-9	Cadmium	5.7	3.8	
7440-70-2	Calcium	3600	38	
7440-47-3	Chromium	160	7.7	
7440-48-4	Cobalt	11	7.7	
7440-50-8	Copper	700	7.7	
7439-89-6	Iron	68000	15	
7439-92-1	Lead	960	7.7	
7439-95-4	Magnesium	3100	38	
7439-96-5	Manganese	820	7.7	
7440-02-0	Nickel	130	7.7	
7782-49-2	Selenium	ND	15	
7440-22-4	Silver	ND	3.8	
7440-28-0	Thallium	ND	7.7	
7440-62-2	Vanadium	63	7.7	
7440-66-6	Zinc	2800	7.7	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Metals in Soil Medium Level by ICP

Client Sample ID: R01-120705BE-0014  
Date of Collection: 7/5/2012  
Date of Digestion: 7/10/2012  
Date of Analysis: 7/13/2012  
Volume Digested: N/A

Lab Sample ID: AB31010  
Matrix: Lab Sand  
Final Volume: 50 mL  
Digestate Dilution: 1  
pH: N/A

CAS Number	Parameter	Concentration mg/Kg	RL mg/Kg	Qualifier
7429-90-5	Aluminum	2500	11	
7440-36-0	Antimony	73	2.0	
7440-38-2	Arsenic	89	2.0	
7440-39-3	Barium	6.7	2.0	
7440-41-7	Beryllium	28	0.78	
7440-43-9	Cadmium	18	0.98	
7440-70-2	Calcium	990	9.8	
7440-47-3	Chromium	3.5	2.0	
7440-48-4	Cobalt	34	2.0	
7440-50-8	Copper	32	2.0	
7439-89-6	Iron	4200	3.9	
7439-92-1	Lead	43	2.0	
7439-95-4	Magnesium	6900	9.8	
7439-96-5	Manganese	41	2.0	
7440-02-0	Nickel	37	2.0	
7782-49-2	Selenium	17	3.9	
7440-22-4	Silver	9.6	0.98	
7440-28-0	Thallium	ND	2.0	
7440-62-2	Vanadium	150	2.0	
7440-66-6	Zinc	5.1	2.0	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Intervale Street Site - Quincy, MA

Laboratory Reagent Blank

Client Sample ID:	N/A	Lab Sample ID:	N/A
Date of Collection:	N/A	Matrix:	Water
Date of Digestion:	7/10/2012	Final Volume:	50 mL
Date of Analysis:	7/13/2012	Digestate Dilution:	1
Volume Digested:	N/A	pH:	N/A

CAS Number	Parameter	Concentration ug/L	RL ug/L	Qualifier
7429-90-5	Aluminum	ND	110	
7440-36-0	Antimony	ND	20	
7440-38-2	Arsenic	ND	20	
7440-39-3	Barium	ND	20	
7440-41-7	Beryllium	ND	8.0	
7440-43-9	Cadmium	ND	10	
7440-70-2	Calcium	ND	100	
7440-47-3	Chromium	ND	20	
7440-48-4	Cobalt	ND	20	
7440-50-8	Copper	ND	20	
7439-89-6	Iron	ND	40	
7439-92-1	Lead	ND	20	
7439-95-4	Magnesium	ND	100	
7439-96-5	Manganese	ND	20	
7440-02-0	Nickel	ND	20	
7782-49-2	Selenium	ND	40	
7440-22-4	Silver	ND	10	
7440-28-0	Thallium	ND	20	
7440-62-2	Vanadium	ND	20	
7440-66-6	Zinc	ND	20	

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

METALS MATRIX SPIKE (MS) RESULTS

Intervale Street Site - Quincy, MA

Sample ID: AB30998

PARAMETER	SPIKE ADDED mg/Kg	SAMPLE CONCENTRATION mg/Kg	MS CONCENTRATION mg/Kg	MS % REC	QC LIMITS (% REC)
Antimony	98.0	ND	91.6	94	75 - 125
Arsenic	98.0	8.9	105	98	75 - 125
Barium	98.0	1500	400	R	75 - 125
Beryllium	39.2	ND	39.8	102	75 - 125
Cadmium	49.0	6.3	55.3	100	75 - 125
Chromium	98.0	120	191	72	75 - 125
Cobalt	98.0	ND	107	109	75 - 125
Copper	98.0	3200	1090	R	75 - 125
Lead	98.0	3200	3650	R	75 - 125
Manganese	98.0	790	916	R	75 - 125
Nickel	98.0	110	199	91	75 - 125
Selenium	98.0	ND	97.7	100	75 - 125
Silver	19.6	ND	21.4	109	75 - 125
Thallium	98.0	ND	100	102	75 - 125
Vanadium	98.0	28	132	106	75 - 125
Zinc	98.0	1100	1280	R	75 - 125

Comments:

Samples in Batch: AB30998, AB30999, AB31000, AB31001, AB31002, AB31003, AB31004, AB31005, AB31006, AB31007,  
AB31008, AB31010

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Laboratory Duplicate Results

Intervale Street Site - Quincy, MA

Sample ID: AB30999

PARAMETER	SAMPLE RESULT mg/Kg	SAMPLE DUPLICATE RESULT mg/Kg	PRECISION RPD %	QC LIMITS
Aluminum	12000	11000	9	30
Antimony	3.2	3.8	17	30
Arsenic	11	10	10	30
Barium	260	420	47	30
Beryllium	ND	ND	NC	30
Cadmium	5.0	4.8	4	30
Calcium	5900	5500	7	30
Chromium	110	83	28	30
Cobalt	9.0	8.4	7	30
Copper	580	500	15	30
Iron	29000	32000	10	30
Lead	1100	920	18	30
Magnesium	3200	3200	0	30
Manganese	550	540	2	30
Nickel	93	78	18	30
Selenium	ND	ND	NC	30
Silver	0.99	4.3	130	30
Thallium	2.5	3.0	18	30
Vanadium	42	39	7	30
Zinc	1200	1700	0	30

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

Laboratory Fortified Blank (LFB) Results

Intervale Street Site - Quincy, MA

PARAMETER	LFB AMOUNT SPIKED ug/L	LFB RESULT ug/L	LFB RECOVERY %	QC LIMITS %
Aluminum	1000	1020	102	85 - 115
Antimony	1000	953	95	85 - 115
Arsenic	1000	936	94	85 - 115
Barium	1000	1020	102	85 - 115
Beryllium	400	377	94	85 - 115
Cadmium	500	473	95	85 - 115
Calcium	10000	10100	101	85 - 115
Chromium	1000	1030	103	85 - 115
Cobalt	1000	999	100	85 - 115
Copper	1000	1050	105	85 - 115
Iron	1000	1010	101	85 - 115
Lead	1000	982	98	85 - 115
Magnesium	10000	9850	99	85 - 115
Manganese	1000	982	98	85 - 115
Nickel	1000	992	99	85 - 115
Selenium	1000	890	89	85 - 115
Silver	200	198	99	85 - 115
Thallium	1000	999	100	85 - 115
Vanadium	1000	1040	104	85 - 115
Zinc	1000	932	93	85 - 115

Comments:

US ENVIRONMENTAL PROTECTION AGENCY  
NEW ENGLAND LABORATORY

**Solid Laboratory Control Sample (LCS) Results**

Intervale Street Site - Quincy, MA

PARAMETER	LCS RESULTS mg/Kg	CONTROL LIMITS mg/Kg
Aluminum	9690	3950 - 12800
Antimony	90.1	2 - 186
Arsenic	94.8	77.8 - 111
Barium	167	140 - 193
Beryllium	56.3	47.8 - 67.4
Cadmium	59.0	50.3 - 70.7
Calcium	6090	5110 - 7180
Chromium	73.9	57.6 - 83.2
Cobalt	104	84.9 - 119
Copper	87.8	66.7 - 92.4
Iron	14500	6330 - 18700
Lead	91.1	75.5 - 108
Magnesium	2670	1960 - 3190
Manganese	291	233 - 332
Nickel	58.7	47.7 - 67.5
Selenium	83.2	69.2 - 104
Silver	36.6	22.8 - 46.1
Thallium	119	93.9 - 145
Vanadium	65.7	41.9 - 72
Zinc	133	115 - 165

Comments:

## PROJECT NOTES


Site Name: Intervale Street Site  
Site Code: 01KK  
Date: 7/26/2012

PN: 12070007  
TO: 82  
Task: 02  
TDF: 2666

### Perkin Elmer Dual View 4300 ICP

#### Metals in Soil, 12070007, \$METMS PE

- Matrix Spike analysis was performed on sample AB30998. No percent recoveries (%RECs) were calculated for barium, copper, lead, manganese and zinc since these analyte concentrations were greater than four times the spike levels. The %REC for chromium was outside the quality control (QC) limits; this result was qualified as estimated J1.
- Laboratory Duplicate analysis was performed on sample AB30999. The Relative Percent Differences (RPDs) for barium and silver were outside the QC acceptance limits; these results were qualified as estimated J3. ✓
- Calcium (76.74 µg/L) and iron (23.03 µg/L) were found in the Laboratory Reagent Blank (LRB) at concentrations > ½ the reporting limits; however the observed concentrations of calcium and iron in all samples were greater than 10 times the concentrations found in the LRB. Qualification of the calcium and iron results was not required on this basis. ✓
- Since this project is from a new site, serial dilutions and post spikes are included in the data package. ✓
- It should be mentioned that the InterElement Correction (IEC) factors were checked and verified for iron due to performance prior to the analysis of the reported results. A Preventative Maintenance (PM) is scheduled for the instrument; it might be worth it to adhere to the schedule so that the torch in use can be switched out and all performance verifications can be re-established.
- Several Samples were re-analyzed at dilutions due to high analyte concentrations; the reporting limits were raised accordingly.
- The reporting limit (RL) for selenium was raised since the concentration of selenium in at least one of the Interference Check Samples (IFCSA) was greater than ½ the reporting limit. ✓

Signature: 

Date: 7/26/2012